REMARKS

The Examiner is thanked for the thorough examination and search of the subject Patent Application and for finding allowable subject matter in Claims 15, 23-25, 38-40, and 41-50. Claims 1, 26, 27, 29, 30, 41, 46, and 51 have been amended. Claims 31 and 32 have been canceled.

Reconsideration of Claims 1, 3, 4, 8, 9, 16, 17, 21, 22, 26, 27, 29, 36, and 37 rejected under 35 USC 102(b) as being anticipated by Quackenbush is requested based on Amended Claims 1, 26, 27 and 29, and on the following remarks.

Applicant agrees that Quackenbush describes a capacitor. However Applicant believes that Quackenbush substantially differs from Applicant's claimed invention. In particular, Quackenbush describes a capacitor 80 with plates 86, 87, and 88 formed from a laminate of sublayers of a conductive plastic including conductive particles in a resinous material. Quackenbush teaches extruding the combined resinous material and conductive particles "through an extension die which includes a "melt flow enhancer" which divides the extrudate into several layers before recombining the extrudate into a laminate layer of the desired thickness" (column 1, lines 49-52). As a result, a

series of parallel sublayers 11, 12, 13, and 14 are formed (Fig. 1). However, according to this teaching, the conductive particles are only randomized within the confines of each sublayer 11, 12, 13, and 14 and are further oriented by the boundaries of each sublayer due to interaction with the melt flow enhancer (Fig. 6). As a result, "For sublayers having thicknesses of less than the size of the conducting particles, those particles are flattened as well as elongated in the direction of the extrudate flow."

In Applicant's invention, Applicant teaches a capacitor 10 having at least one plate 12 or 14 comprising a conductive loaded, resin-based material where this material comprises conductive materials **substantially homogeneously mixed** in a base resin hose. This limitation is made clear in Amended Claim 1 as shown below:

1. (Currently Amended) A capacitor device comprising:

a first plate comprising a conductive loaded, resin-based material comprising conductive materials substantially homogeneously mixed in a base resin host; and

a second plate fixably held nearby but not contacting said first plate such that said first plate and said second plate are capacitively coupled.

Applicant notes that the conductive materials are homogeneously mixed as recited in line 4. The term, homogeneous is referenced by the Applicant in several locations in the Specification (page 13, line 5, line 8, line 16) to describe the combination of the conductive loading and the base resin. In the American Heritage® Dictionary of the English Language: Fourth Edition, 2000, homogeneous is defined as "uniform in structure or composition throughout." In the context of Applicant's claimed invention, a substantial homogeneous mixing of the conductive loading into the base resin means that all parts of the mixture are substantially uniformly mixed. The feature of a capacitor plate comprising a substantially homogeneously mixed conductive loaded resin-based material is clearly taught in Applicant's invention as recited in Amended Claim 1 and as supported in the Original Specification.

Applicant's claimed invention teaches, as a significant feature, a capacitor plate comprising a conductive loaded resin-based material where a substantial homogeneous mixing of the conductive loading in the base resin is used, by design. By comparison, Quackenbush teaches a capacitor plate comprising a laminate of sublayers of a conductive plastic comprising conductive particles in a resinous material where, by design,

the conductive particles are not uniformly mixed but, rather, are oriented by the boundaries of the sublayers. Applicant believes that Applicant's claimed invention teaches a feature not taught by Quackenbush. Therefore, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 1, is not anticipated by Quackenbush and should not be rejected under 35 USC 102(b). Further, Claims 3, 4, 8, 9, 16, 17, 22, and 22 represent patentably distinct, further limitations on Claim 1 that should not be rejected under 35 USC 102(b) if Claim 1 is not rejected.

In addition, Claim 26 has been amended to include the above-described limitation as is shown here:

26. (Currently Amended) A capacitor device comprising:

a first plate comprising a conductive loaded, resin-based material comprising conductive materials substantially homogeneously mixed in a base resin host and wherein said conductive materials comprise stainless steel fiber;

a second plate comprising said conductive loaded, resin-based material; and

a dielectric material between said first plate and said second plate wherein said first plate and said second

plate are capacitively coupled.

Again, Amended Claim 26 recites the feature of a substantially homogeneously mixed conductive loaded resin-based material that is not taught by Quackenbush. In addition, Amended Claim 26 also recites a limitation wherein the conductive loading comprises stainless steel fiber. Applicant notes that Quackenbush does not teach the use of metal fiber for the conductive loading, in general, and stainless steel fiber in particular. Therefore, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 1, is not anticipated by Quackenbush and should not be rejected under 35 USC 102(b). Further, Claims 27, 29, 36, and 37 represent patentably distinct, further limitations on Claim 26 that should not be rejected under 35 USC 102(b) if Claim 26 is not rejected.

Reconsideration of Claims 1, 3, 4, 8, 9, 16, 17, 21, 22, 26, 27, 29, 36, and 37 rejected under 35 USC 102(b) as being anticipated by Quackenbush is requested based on Amended Claims 1, 26, 27 and 29, and on the above remarks.

Reconsideration of Claims 2, 11, 12, 14, 31, and 32 rejected under 35 USC 103(a) as being unpatentable over Quackenbush in view of Watanabe et al is requested based on

Amended Claims 1 and 26, on Canceled Claims 31 and 32, and on the following remarks.

As described above, Quackenbush teaches a different capacitor plate than taught in Applicant's claimed invention as recited in Amended Claims 1 and 26. Applicant refers to the discussion above where Quackenbush fails to teach Applicant's feature of a substantially homogeneously mixed conductive loaded resin-based material as recited in Claim 1 and of a homogeneously mixed conductive loaded resin-based material and a stainless steel conductive loading as recited in Claim 26. Further, Applicant believes that Quackenbush teaches against Applicant's claimed invention. In particular, Quackenbush states the following:

(1) "This invention is based on the recognition that the conductivity exhibited by a conductive plastic is a strong function of the physical placement of the conducting particles in the plastic material. Thus, it has been found that by extruding layers- of conductive plastic material from an extrudate including a specified amount of conducting material in it, a relatively higher conductivity is achieved if the conductive plastic is

extruded as a composite laminate layer rather than as a single layer." (col. 1, lines 38-47)

(2) "At present, unacceptable embrittlement occurs with amounts of conducting particles insufficient to produce conductivity levels high enough for many commercial applications." (col. 1, lines 24-27)

(3) "It is known, for example, that electrically conductive plastics include electrically conducting material such as carbon particles which are randomly distributed in them. Any electrically conducting paths through the material follow paths including a sequence of particles as well as plastic between them and thus do not follow straight lines. Current carrying capacity is reduced primarily by the amount of plastic traversed as a result." (col. 1, lines 57-60)

The above citations show that Quackenbush considered an approach to a conductive plastic wherein conductive particles are randomly distributed in the plastic. This approach is rejected by Quackenbush as not practical due to low conductivity and/or embrittlement. Further, Quackenbush chooses to use an extruded, composite laminate conductive plastic rather than a single layer. In these respects, Applicant believes that Quackenbush actively teaches against Applicant's approach of a

substantially homogeneously mixed, conductive loaded resin-based material. Therefore, Applicant does not believe it would have been obvious for one skilled in the art at the time of the invention to have used the teachings of Quackenbush to practice the inventive feature of forming a capacitor plate from conductive loaded, resin-based material according to the present invention.

In addition, Applicant has reviewed the teachings of Watanabe et al. Applicant makes several important observations. First, Watanabe et al does not teach or suggest forming a capacitor plate from a conductive loaded resin-based material. Second, where Watanabe et al does reference a conductive material with fiber it is in reference to a paste or adhesive material rather than to a moldable material. In particular, Watanabe et al states:

"The electrode active material and the current collector can be fixed by an electrically conductive adhesive. The electrically conductive paste is prepared by dissolving a resin in a solvent and adding powder or fiber of carbon or metal, or by dissolving a conductive polymer in a solvent." (Col. 8, 43-46)

Finally, Watanabe et al does not teach or suggest the use of stainless steel fiber for the conductive loading material as is taught in Claim 12.

Based on the above analysis, Applicant believes that Quackenbush in view of Watanabe et al fails to teach or to suggest Applicant's claimed invention such that one skilled in the art at the time of the invention could have practiced the present invention. Further, Quackenbush appears to teach against Applicant's claimed invention. Therefore, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 1, is not unpatentable over Quackenbush in view of Watanabe et al and should not be rejected under 35 USC 103(a). Further, Claims 2, 11, 12, 1and 14 represent patentably distinct, further limitations on Claim 1 that should not be rejected under 35 USC 103(a) if Claim 1 is not rejected.

Reconsideration of Claims 2, 11, 12, 14, 31, and 32 rejected under 35 USC 103(a) as being unpatentable over Quackenbush in view of Watanabe et al is requested based on Amended Claims 1 and 26, on Canceled Claims 31 and 32, and on the above remarks.

Reconsideration of Claims 5, 6, 7, and 28 rejected under 35 USC 103(a) as being unpatentable over Quackenbush in view of Azechi et al is requested based on Amended Claims 1 and 26 and on the following remarks.

Applicant references the above analysis with regards to Quackenbush. In addition, Applicant has reviewed Azechi et al and finds no teaching or suggestion for forming capacitor plates from a conductive loaded resin-based material as taught in Applicant's claimed invention. In addition, Azechi et al does not teach or suggest the use of stainless steel fibers as is taught in Applicant's Amended Claim 26. Applicant believes that Quackenbush in view of Azechi et al fails to teach or to suggest Applicant's claimed invention such that one skilled in the art at the time of the invention could have practiced the present invention. Further, Quackenbush appears to teach against Applicant's claimed invention. Therefore, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 1, is not unpatentable over Quackenbush in view of Azechi et al and should not be rejected under 35 USC 103(a). Further, Claims 5, 6, and 7 represent patentably distinct, further limitations on Claim 1 that should not be rejected under 35 USC 103(a) if Claim 1 is not rejected. In addition, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 26,

is not unpatentable over Quackenbush in view of Azechi et al and should not be rejected under 35 USC 103(a). Further, Claim 28 represents a patentably distinct, further limitation on Claim 26 that should not be rejected under 35 USC 103(a) if Claim 26 is not rejected.

Reconsideration of Claims 5, 6, 7, and 28 rejected under 35 USC 103(a) as being unpatentable over Quackenbush in view of Azechi et al is requested based on Amended Claims 1 and 26 and on the above remarks.

Reconsideration of Claims 10, 18-20, 30, and 33-35 rejected under 35 USC 103(a) as being unpatentable over Quackenbush is requested based on Amended Claims 1 and 26 and on the following remarks.

Applicant references the above analysis with regards to Quackenbush. Applicant believes that Quackenbush fails to teach or to suggest Applicant's claimed invention such that one skilled in the art at the time of the invention could have practiced the present invention. Further, Quackenbush appears to teach against Applicant's claimed invention. Finally, Applicant officially disputes the conclusion that the teachings of Quackenbush establish an equivalence for carbon and metals.

Quackenbush does mention carbon and a copper containing material and a salt. However, no equivalence is established for the general category of all metals or all forms of metals. Based on the above, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 1, is not unpatentable over Quackenbush and should not be rejected under 35 USC 103(a). Further, Claims 10 and 18-20 represent patentably distinct, further limitations on Claim 1 that should not be rejected under 35 USC 103(a) if Claim 1 is not rejected. In addition, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 26, is not unpatentable over Quackenbush and should not be rejected under 35 USC 103(a). Further, Claims 30 and 33-35 represent patentably distinct, further limitations on Claim 26 that should not be rejected under 35 USC 103(a) if Claim 26 is not rejected.

Reconsideration of Claims 10, 18-20, 30, and 33-35 rejected under 35 USC 103(a) as being unpatentable over Quackenbush is requested based on Amended Claims 1 and 26 and on the above remarks.

Reconsideration of Claims 13 rejected under 35 USC 103(a) as being unpatentable over Quackenbush in view of Watanabe et al

and Azechi et al is requested based on Amended Claim 1 and on the following remarks.

Applicant references the above analysis with regards to Quackenbush. Applicant believes that Quackenbush fails to teach or to suggest Applicant's claimed invention such that one skilled in the art at the time of the invention could have practiced the present invention. Further, Quackenbush appears to teach against Applicant's claimed invention. Therefore, Applicant believes that Applicant's claimed invention, as recited in Amended Claim 1, is not unpatentable over Quackenbush and should not be rejected under 35 USC 103(a). Further, Claim 13 represents a patentably distinct, further limitation on Claim 1 that should not be rejected under 35 USC 103(a) if Claim 1 is not rejected.

Reconsideration of Claims 13 rejected under 35 USC 103(a) as being unpatentable over Quackenbush in view of Watanabe et al and Azechi et al is requested based on Amended Claim 1 and on the above remarks.

Reconsideration of Claims 51-55 rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention is requested based on Amended Claims 41, 46, and 51 and on the following remarks.

In light of Examiner's concern about the clarity of Claim 51, Applicant has amended Claim 41 (the base claim) to change the process verb from molding to forming (line 5). As a result, Claim 46 has been amended such that the dependent reference to molding in line 1 is now drawn to forming. Similarly, Claim 51 has been amended to draw reference to forming in line 1. Therefore, Claim 46 is now specific to molding, as in injection molding. Claim 51 is now specific to extruding. Applicant believes that these amendments clarify the claimed subject matter of the present invention within the bounds of the allowable subject matter.

Reconsideration of Claims 51-55 rejected under 35 USC, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is requested based on Amended Claims 41, 46, and 51 and on the above remarks.

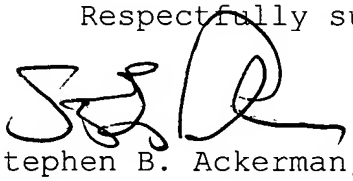
All Claims are believed to be in condition for Allowance, and that is so requested.

Applicants have reviewed the prior art made of record and not relied upon and have discussed their impact on the present invention above.

Allowance of all Claims is requested.

It is requested that should the Examiner not find that the Claims are now Allowable that the Examiner call the undersigned at 989-894-4392 to overcome any problems preventing allowance.

Respectfully submitted,



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